Bosscher, Valerie

From: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Sent: Thursday, July 15, 2021 8:13 AM
To: Bosscher, Valerie
Subject: RE: Illinois USDA FSA Assistance

Categories: Record Saved - Shared

Good morning Val,

I have noted the responses below in red. Please let me know if additional information is required or if you have any questions. Thank you for your assistance!

John Gehrke
217 331-6873

From: Gehrke, John - FSA, Springfield, IL
Sent: Wednesday, July 14, 2021 1:37 PM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>
Subject: RE: Illinois USDA FSA Assistance

Val,

The project engineer is out this week, but I am still hoping for responses from some other people. I did get the certification your requested and it is attached.

John Gehrke
217 331-6873

From: Gehrke, John - FSA, Springfield, IL
Sent: Tuesday, July 13, 2021 10:23 AM
To: 'Bosscher, Valerie' <bosscher.valerie@epa.gov>
Subject: RE: Illinois USDA FSA Assistance

Val,

I have some of the information, but I requested clarification from the project engineer. I will get you a complete response as soon as possible.

I have attached the best well information I have, including the nearest Friend and Fanter wells.

John Gehrke
217 331-6873

From: Bosscher, Valerie <bosscher.valerie@epa.gov>
Sent: Monday, July 12, 2021 4:58 PM
To: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Subject: RE: Illinois USDA FSA Assistance

Hi John,

In follow up to the email string below, as well as our conversation on 6/25, I'm following up on a couple of items:

1. Were you able to find out more about concrete floor thickness (4-inch vs. 5-inch) from NRCS? I am also reaching out to R5 EPA folks on this. My understanding in talking with NRCS and with Ted Funk is that the 4" meets Illinois law and there is no history of problems with the 4" floor. The 5" meets the "national standard" i.e. (ACI) Manual of Concrete Practices 318 requirements. NRCS EQIP standards require the floor to be thick enough for the rebar to have 2" cover on the top and 3" cover on the bottom. That would mean the floor thickness would need to be 5" plus the thickness of the rebar (most likely 5.5" thick). Again, the 4" thickness meets Illinois requirements.
2. Were you able to find out more about local depth to groundwater (e.g. static water levels in nearby wells)? If not, the state is already requiring the perimeter foundation drain and associated monitoring. We have provided local well data in a separate email.
3. What will be the power source(s) for (1) manure pump-outs and/or (2) perimeter foundation drainage (if not gravity drainage as suggested to be likely below)? Specifically, will petroleum storage tank(s) be required on-site? My understanding is that any power sources will be electric.

And a couple of new questions:

1. Is it possible for you to share the 8 IAC 900.503 (c) design statement/certification by a PE/PG/equivalent? Although it's referenced as being received by IL Dept Ag, I don't see the actual design certification statement signed by a PE/PG in the materials provided by FSA. This was provided in a separate email yesterday.
2. Are additional liquids (e.g. besides animal wastes, animal drinking trough overflow, and washdown) added to allow pumping out of the manure? Your and the engineer's response below refers to pump out covers to keep out stormwater, but I'm just wondering if other liquid (or stormwater downspouts) is added routinely or just before pump-out events. I am not sure I understand this question, but drinking water and washdown water would be included in the pit, but no storm water. These building have either gutters and downspouts, or earthen berms around the facility. Both are designed to ensure surface water flows away from the facility. As noted, the perimeter drain is in place with the requirement that the water be tested on a regular basis to monitor as a precaution against any fault.

Thanks again,
Val

Valerie Bosscher, P.E. Environmental Engineer
Ground Water & Drinking Water Branch U.S. EPA Region 5
77 W. Jackson Blvd. (WG-15J) Chicago, IL 60604
Ph 312-886-6731

From: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Sent: Thursday, June 24, 2021 8:58 AM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>
Subject: FW: Illinois USDA FSA Assistance

Val,

Please see the engineer's responses to your questions below

John Gehrke
217 331-6873

From: Jake Nims <jnims@fwieng.com>
Sent: Thursday, June 24, 2021 8:44 AM
To: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Cc: 'Ryan Maschhoff' <ryan.maschhoff@pigsrus.net>
Subject: RE: Illinois USDA FSA Assistance

John,

Please see my comments below in red and let me know if you have any questions.

Jake Nims
Frank & West Environmental Engineers, Inc.
1032 S. 2nd St.
Springfield, IL 62704
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From: Gehrke, John - FSA, Springfield, IL [mailto:john.gehrke@usda.gov]
Sent: Thursday, June 24, 2021 8:21 AM
To: Jake Nims
Cc: Ryan Maschhoff
Subject: FW: Illinois USDA FSA Assistance

Good morning!

The EPA is requesting information about the Fanter Mason County facility. They are assisting us to address concerns residents have regarding the ground water, due to the soil types and especially the sole source aquifer.

Would you be able to assist me in responding to their questions in the most recent email below? Thank you for your help!

John W. Gehrke
Farm Loan Chief
Illinois Farm Service Agency, USDA
3500 Wabash Ave.
Springfield, IL 62711-8287
Phone (217) 331-6873
FAX (855) 800 1760

From: Bosscher, Valerie <bosscher.valerie@epa.gov>
Sent: Wednesday, June 23, 2021 11:23 AM

To: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Subject: RE: Illinois USDA FSA Assistance

Hi John,

A few follow-up questions regarding the plan drawings:

- **Is 4-inch concrete commonly specified for manure pit floors in Illinois?** In Indiana, R5 SSA Program has reviewed 2 swine barn projects for USDA-FSA, and both barns/pits had 5 inch steel-reinforced concrete floors (not counting the footers); the minimum specified is 5 inches for the steel-reinforced concrete floor slab under certain vulnerable conditions (e.g. karst, shallow bedrock, and certain other soil types) and the barns above the Sole Source Aquifer (SSA) specified 5-inch floors even though the Indiana code conditions were not actually triggered by those 2 swine operations we reviewed.
  4" floor thickness is the most common design in Illinois. Typically, only projects that receive funding through the NRCS EQIP program utilize a 5" thick floor. They are correct that Indiana requires a 5" thick floor. However, Illinois does not.

- Can you tell me more about what you mean by "zero discharge" (in yesterday's email**)?** I responded to this one already

    - The intro pages reference clay liner specifications, but these are not indicated on any of the project-specific pages. **Please let me know I missed any additional protective layers below the concrete floor.** The general notes pages are included on all of our construction plans. We do sometimes have projects that utilize a clay layer for containment rather than concrete (earthen storage ponds, beef bedpack barns, etc). No clay liner is proposed for this project.

    - I do see the waterstop material to be installed within the walls/floor of the pit – **is the waterstop a painted on sealant between concrete layers or a geotextile fabric?** Two different types of waterstops are typically used at wall and floor joints. The first type is a strip that has an adhesive back that is placed after the floor is poured and then the wall is poured on top of it. When it comes in contact with moisture, it expands sealing the joint. Swellstop is an example of this (https://usa.sika.com/en/construction/concrete/concrete-accessories/waterstop-systems/hydrophilic-swelling-waterstop/swellstop.html) that is commonly used. The other type is either a center bulb or barbell style waterstop that is placed in the floor when it is poured. A portion of it extends up out of the floor and then the wall is poured over it (https://usa.sika.com/en/construction/concrete/concrete-accessories/waterstop-systems/pvc-waterstop/greenstreak-pvc-waterstop.html). Both methods are common and approved for use by IDOA. Which one is used is typically determined by contractor preference or product availability.

- Will there the roof extend over the pump-out area? Typically the roof does not extend out completely over the pumpout area. However, the pumpouts are typically covered by a lid that contains a fan which keeps out rainwater.

Regarding depth to groundwater –

- The soil boring does not say anything about moisture or groundwater, so I'm guessing it likely was dry. **Can the engineer/geologist confirm there was no apparent groundwater by the end of boring at 13 ft bgs?** On the day that I was there, there was no groundwater in the boring.

- From the information yesterday, static water levels in nearby wells range include 8 ft (Kruse farm installed by Albrecht, located ~0.5 mi W-NW of the barn site) and 35 ft (Fanter farm installed by Dowell, located ~0.25mi N-

NW of the barn site). I didn't see static water levels on the other well logs, such as the Friend farm installed by Henry in 1997 which I think is the closest to the barn site. I will have to respond to this one – just left it in as an FYI

Thanks,
Val

Valerie Bosscher, P.E. Environmental Engineer
Ground Water & Drinking Water Branch U.S. EPA Region 5
77 W. Jackson Blvd. (WG-15J) Chicago, IL 60604
Ph 312-886-6731

From: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Sent: Tuesday, June 22, 2021 1:19 PM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>
Cc: Bielanski, Jennifer <Bielanski.Jennifer@epa.gov>
Subject: RE: Illinois USDA FSA Assistance

Valerie,

I want to provide additional information regarding the proposal:

- There will be a composting facility on site. It will have 4 bays, concrete floor (sloped inward) and walls and it will be covered.
- I have attached additional information regarding wells in the vicinity
- The integrator will be assisting the producer with a nutrient management plan. Neither the IL EPA or the Illinois Department of Agriculture require one for a facility labeled as an Animal Feeding Operation (AFO). This operation would be less than 1000 animal units.

We have had public concern with the possible effects to the groundwater / aquifer. The pit is designed as a zero discharge facility.

I would like to discuss this project with you. Could we possibly schedule a time for a call?

John W. Gehrke
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From: Gehrke, John - FSA, Springfield, IL
Sent: Tuesday, June 15, 2021 1:29 PM
To: 'Bosscher, Valerie' <bosscher.valerie@epa.gov>
Cc: Bielanski, Jennifer <Bielanski.Jennifer@epa.gov>
Subject: RE: Illinois USDA FSA Assistance

Hi Valerie,

I have responded in red to the questions I can answer. Attachments have been included to address the soil boring, pit design, and manure easement.

I hope this helps and I look forward to discussing this with you soon.

John Gehrke
217 331-6873

From: Bosscher, Valerie <bosscher.valerie@epa.gov>
Sent: Tuesday, June 15, 2021 11:41 AM
To: Gehrke, John - FSA, Springfield, IL <john.gehrke@usda.gov>
Cc: Bielanski, Jennifer <Bielanski.Jennifer@epa.gov>
Subject: RE: Illinois USDA FSA Assistance

Good morning, John,

As the Region 5 Sole Source Aquifer coordinator, I can assist you with the SSA project review.

To assist with my review, could you provide available information to address the items below?

- What are the red outlines and red "X" on the maps in first 5 pages of the "Scan 1" pdf that you had attached? Those were simply free hand markings I made in google maps to indicate to the State Historic Preservation Agency where the barn was to be located. These show the property, not where the barn is located on the property.

- Construction description for the barn's manure pit (e.g. reinforced concrete floor/walls?) and location/construction for any mortality management and composting areas. See attached plans. I did not include these in the original scans due to certain privacy issues with the public.

- Depth to groundwater (e.g., below ground surface)? Will the perimeter drain be routinely pumped out? I have attached the soil boring report. I received this response from the engineer: Regarding the perimeter tile, I believe the site allows the perimeter tile to gravity flow away from the building so that it will be continuously drained. If that is not feasible, then a sump pump will be placed at a corner of the barn and a pump with float will be placed in the sump to pump water away from the building as needed. I received this response from the integrator: I am not 100% sure what the slope will be around the barn once complete but it will either have a drain to daylight or if that is not possible it will have a sump pump to pull the water away from the barn perimeter. This is part of the IDOA regulations for sites with perimeter tiles as well as quarterly monitoring of the water quality from the perimeter tile.

- Are there any well(s) on-site or within ~0.25 miles of the proposed barn or land application sites? Illinois' Source Water Assessment Protection Program map shows that the nearest oil/gas wells are >1 mile away from the

proposed barn (as per attachments B and C in "Scan 1), and the nearest ISGS water wells are ~0.25 miles from the proposed barn. There are irrigation wells within a mile of the site.

- Were any negative/opposing public comments / letters received by the state during their review/permitting process? There were negative comments received by the State regarding concerning potential air quality and water quality concerns. I believe they were more general comments rather than specifics. People wrote letters to the editor. Do you want to see those? My understanding that there was a discussion at the county board requesting set backs be increased in the county. The proposal died for lack of a second by a board member.

- Regarding "The manure will be injected directly into the soil of the adjacent farmland by a commercial applicator at approved agronomic rates.", are there specific addresses (e.g. approved by the state) or will all manure land application be only on the Fanter property? Please indicate the anticipated number of land application sites, whether they are above the Mahomet Aquifer, whether they have tile drains, and if there are any wells on-site. The land is adjacent to the building site and is approximately 548 acres. It is not tiled, but it does contain an irrigation well. Being adjacent to the site, the land is located above the aquifer.

Please let me know if you'd like to discuss or have any questions. I should be able to get back to you within a couple of weeks after your response, noting that there may be some delay on my end in late June/early July due to scheduled vacation.

Thank you for your assistance,
Val

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